

# CLAIMS

1. Process for preparing a lithographic mask, comprising:

- 5                   - a stage for making patterns (10) on a plane mask (12), that has an SOI structure, comprising a layer of semiconductor material, a buried layer (34) of insulant and a substrate (36),
- a stage for transferring the patterns to a support (16) that has a non-nil curvature on at least one point of its surface.
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2. Process according to claim 1, the patterns being made by electron beam lithography (4).

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3. Process according to claim 1 or 2, additionally comprising a stage for thinning the substrate (36) of the SOI structure.

20                   4. Process according to one of claims 1 to 3, the transfer stage comprising previously a thinning of the plane mask (12), then the installation of a handle substrate (14).

25                   5. Process according to one of claims 1 to 4, the curved support (16) being of metal, or glass or plastic material.

30                   6. Process according to one of claims 1 to 5, with means allowing a local deformation to be made of the support (16) with the non-nil curvature.

7. Process according to one of claims 1 to 6, the patterns (10) having a maximum dimension of between 50 nm and 10  $\mu$ m.

5                8. Lithographic mask comprising a support (16) that has a non-nil curvature on at least one point of its surface, and a substrate (12), of Silicon or silica or nitride, comprising a plurality of patterns (10) and applied against this surface.

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9. Mask according to claim 8, the support being of metal or glass or plastic material.

10. Mask according to one of claims 8 or 9,  
15 additionally comprising means for inducing a local deformation of said support (16).